Equinox® II

NITROUS OXIDE / OXYGEN 50/50% DEMAND VALVE

01EQ7001E

USER MANUAL

Made in Canada by
O-Two Medical Technologies Inc.
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1. INTRODUCTION

1.1 Equinox® II DEMAND VALVE

O-Two Medical Technologies Equinox® II Demand Valve provides trained individuals with a safe and effective means of providing analgesia (pain relief) by inhalation.

O-Two Medical Equinox® II Demand Valves are lightweight, portable, and extremely durable. Designed for the demands of the pre-hospital and in-hospital environment, they can be operated anywhere 50% Nitrous Oxide/50% Oxygen mixture cylinders are available.

Note: Only those individuals trained in the administration of Nitrous Oxide/Oxygen mixtures should use this equipment. Thoroughly review the instruction manual before use.

1.2 WARRANTY

WARRANTY

O-Two equipment is manufactured from the finest quality materials. Each individual part is subject to strict quality control tests to ensure exceptionally high standards. The manufacturer warrants to the purchaser of DEMAND VALVE (RESUSCITATOR) that its component parts are free from defects in material and workmanship for a period of two years from the date of purchase. The manufacturer will replace and /or repair all parts of the resuscitator at its option for two years from the date of purchase at no cost to the purchaser, upon the notification of the defects, in writing by the purchaser. All shipping costs shall be borne by the purchaser. The manufacturer shall be liable under this warranty only if the resuscitator and its parts have been used and serviced in the normal manner described in the instruction manual. There are no other expressed or implied warranties. This warranty gives no specific legal rights. You may also have other rights which may vary according to local regulations.

1.3 SAFETY PRECAUTIONS

The O-Two Medical Equinox® II Demand Valve is intended for use by suitably trained and qualified personnel.

The following precautions should always be observed:

1. **CAUTION:** FEDERAL LAW IN THE U.S.A. RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A LICENSED PRACTITIONER.
2. WHEN THE UNIT IS IN USE, DO NOT SMOKE OR USE NEAR OPEN FLAME EITHER DURING USE OR WHEN CHANGING THE CYLINDER.
3. WHEN NOT IN USE, ALWAYS TURN OFF THE CYLINDER.
4. NEVER ALLOW OIL OR GREASE TO COME INTO CONTACT WITH ANY PART OF THE CYLINDER, REGULATOR OR DEMAND VALVE.
5. DO NOT DISASSEMBLE ANY PART OF THE DEMAND VALVE EXCEPT WHERE DESCRIBED IN THIS MANUAL AS ANY UNAUTHORIZED DISASSEMBLY WILL INVALIDATE THE WARRANTY.
6. AFTER USE, ALWAYS ENSURE THAT ALL COMPONENTS ARE CLEANED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED IN THIS MANUAL.
7. ALWAYS USE THE CHECK LIST TO ENSURE THAT ALL COMPONENTS ARE REASSEMBLED CORRECTLY AND READY FOR USE.
8. AFTER USE, ALWAYS ENSURE THAT A FULL GAS CYLINDER IS ATTACHED BEFORE RETURNING THE UNIT TO ITS NORMAL STORAGE POSITION.

1.4 PERFORMANCE SPECIFICATION

(Minimum) Peak Flow rate..... 140 LPM

Exhalation Resistance ..... 0 to 6 cmH_2O @ 60 LPM

Inhalation Resistance ..... 0 to -6 cmH_2O @ 60 LPM

Input Pressure..... 50 PSI

Initiation Pressure.....-2 to -2.5 cmH_2O

Operating Temp..... 0^0F to 122^0F

-18^0C to 50^0C

Storage Temp..... -40^0F to 140^0F

-40^0C to 60^0C

Input Connection..... 5/8"-18 TPI

Patient Connector..... 15/22 mm

Weight..... 7.4 oz

210 grams

Dimensions (inches)..... Dia. 2.0 x 3.2 (Approx)

(mm)..... Dia. 51 x 81 (Approx)

2. OPERATING PROCEDURE

2.1 DEMAND BREATHING

The O-Two Medical Equinox® II Demand Valve is designed to operate on compressed Nitrous Oxide/ Oxygen gas. It is intended to provide 50/50% Nitrous Oxide/ Oxygen mixture to the patient at a safe delivery pressure and adequate flow rate upon demand.

An inspiratory effort by the patient will open the demand valve and Oxygen/Nitrous Oxide will flow to the patient at a rate and volume in line with their inspiratory effort.

2.2 OPERATING INSTRUCTIONS

1. Ensure that the Equinox® II Demand Valve/Regulator connection is secured and no leaks present.
2. Turn the cylinder hand wheel counter clockwise to the ON position (at least one full turn).
3. Ensure that the regulator contents gauge reads at least 500 psi. If not, replace with a full cylinder.
4. Attach the Universal Facemask to the Equinox® II Demand Valve outlet.
5. Instruct the patient in its operation. Most protocols require the gas mixture be self-administered by the patient to prevent inadvertent excessive administration by an attendant.
6. To trigger the demand valve and obtain an adequate flow of gas, it is necessary to make a good mask to face seal. Simply place the mask on the patient's face, covering both the nose and mouth. Instruct the patient to hold the mask on his/her face with a light pressure and breath normally. The sound of gas flowing should be heard with each inspiration. If not, adjust the patient's hold on the mask for a better seal and ask the patient to breath more deeply.

7. Continue administration as per local management protocol.
8. Ensure that the cylinder is turned OFF after each use and remaining gas released from the system by placing the bleed pin attached to the regulator into the center hole on top of the Equinox® II Demand Valve and depress until gas flow ceases.

2.3 SCAVENGING OF WASTE NITROUS OXIDE/ OXYGEN USING THE SCAVENGER ADAPTER

The optional Scavenger Adapter is designed to replace the Non-rebreathing Patient Valve assembly to scavenge exhaled air from the patient during inhalation analgesia.

The 19 mm exhalation port meets the requirements of the International Standards for Conical Connectors for Low Pressure Medical Gas Systems and will allow the attachment of corrugated tubing so that the patient's exhaled breath can be scavenged from the exhalation valve to the exhaust method chosen by the facility using the device.

3. SERVICING

3.1 ROUTINE MAINTENANCE

WARNING:

The Equinox® II Demand Valve is designed to provide years of reliable service in all emergency situations. Failure to follow the maintenance and inspection routines properly could result in incorrect operation of the demand valve.

To ensure proper operation of the Equinox® II demand valve, regular inspection and checking of the demand valve and accessories for correct function should be undertaken by a responsible member of staff on a regular basis.

This check is to ensure that all of the accessories and demand valve components are present, the gas mixture cylinder is full and that the demand valve is in working order.

MAINTENANCE

Resuscitation parameters should be checked at least every six months, and more frequently in high use applications. Units with test pressures outside of the ranges listed in the product specifications should not be used. O-Two Medical products are not designed for field disassembly or service outside that indicated in this manual. Any malfunctioning units should be returned to the manufacturer or an Authorized O-Two Medical Technologies Dealer. Unauthorized repairs will nullify the product warranty.

3.2 CLEANING AND DISINFECTION

Routine cleaning and/or disinfection of the O-Two Medical Equinox® II Demand Valve should be undertaken after each patient use to maintain the equipment in a clean condition.

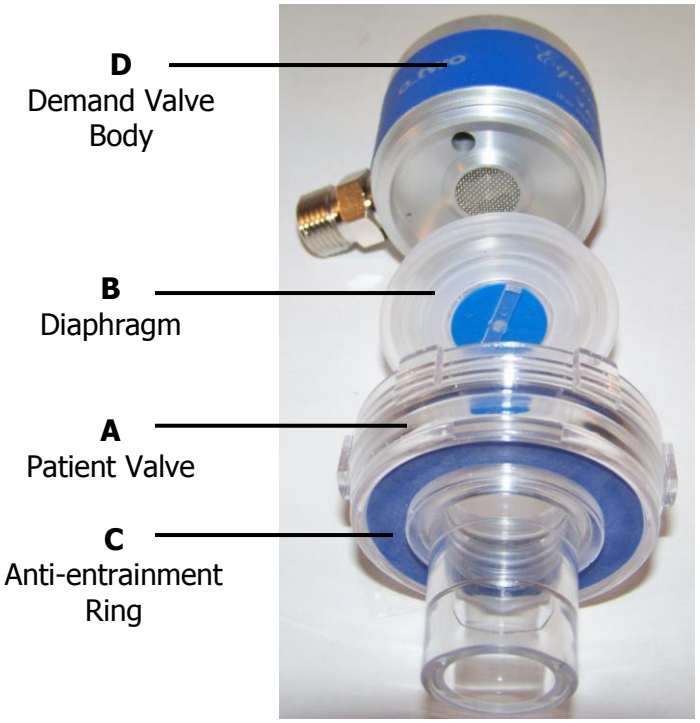

Fig.1

CLEANING/ DISINFECTION PROCEDURE

1. Ensure that the cylinder is turned off (completely clockwise) and bleed any remaining gas out of the gas supply hose.
2. Remove the facemask from the Equinox® II Demand Valve, and then disconnect the demand valve from the regulator.
3. Unscrew patient valve (A) from the unit body being careful to ensure that the diaphragm (B) is retained (Fig1).
4. Remove the diaphragm and anti-entrainment ring (C) from the patient valve swivel housing and wash these components thoroughly in a mild soap solution;
5. Disinfect the face mask, patient valve and diaphragm using commonly available cold chemical disinfecting solutions. Rinse thoroughly with water after disinfection.
6. Sterilization, if required, may be achieved by other methods compatible with the materials of manufacture of these components including Ethylene Oxide Gas and Cidex.
7. The demand valve body (D) and gas supply hose can be wiped over with a soft cloth and mild soap solution and may be disinfected using a hard surface disinfectant that is compatible with aluminium.
8. Dry all components thoroughly.
9. Re-assemble and check performance.

WARNING:

Do not immerse the demand valve unit into cleaning solution or disinfectant.

Discontinue to use and discard the face mask, the patient valve and the diaphragm should discoloration or deterioration be observed.

4. REPLACEMENT PARTS

17MP1528	Silicone Diaphragm
02FM4999	Universal Face Mask
01RE05S10-B	Equinox® Pressure Regulator
01EQ7006	Equinox® II Demand Valve Bleed Pin with Chain
17MP1329	Equinox® II 7' Supply Hose
17MP1320-Equinox	Supply Fitting assembly
17MP9039	Non-rebreathing Valve Assembly

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Equinox® II Nitrous Oxide/ Oxygen Administration Systems
Equinox® Relieve and Equinox® Advantage Nitrous Oxide/ Oxygen Gas Mixing and Delivery System

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